PROC. ENTOMOL. SOC. WASH.
87(2), 1985, pp. 269–272

A NEW NEARCTIC SPECIES OF *PHROSINELLA* (DIPTERA: SARCOPHAGIDAE)

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Abstract.—*Phrosinella* ***aurifacies,*** n. sp., is described from the Nearctic Region. It is the most common species of the genus in eastern North America but was overlooked because it has been confused with *Phrosinella fulvicornis* Allen. The male genitalia are very uniform and not useful for distinguishing species in this group. Apparently ***aurifacies*** is isolated from sympatric relatives primarily by means of the females' recognition of the male facial pattern rather than by anatomical incompatibilities in the male genitalia.

A previously unrecognized *Phrosinella* is described below to make the name available for the paper by Margery Spofford and Frank Kurczewski, which follows. It is a typical miltogrammine fly (Miltogramminae, Miltogrammini). The morphological terminology is that of the "Manual of Nearctic Diptera, Vol. 1" (McAlpine et al., 1981). The means with standard deviations are each derived from measurements of 13 specimens.

This species exhibits all the principal characters of *Phrosinella* as redefined in a forthcoming revision of the Nearctic Miltogramminae: some whitish hairs present on posterior surface of head below neck; frontal vitta broad, about 4 times as wide as frontoorbital plate halfway from median ocellus to lunule; 2 proclinate and 1 reclinate frontoorbitals; lunule setulate and pollinose; parafacial with scattered minute setulae only; facial ridge without large bristles above vibrissae; vibrissae differentiated and at level of ventral edge of facial plate; third antennal segment 3 or more times length of second; hinge plate rudimentary; palpus orange; prementum short, bulbous and pollinose. Distal section of CuA_1 (beyond crossvein dm-cu) less than half length of basal section; distal half of fore tibia with a loose ventral comb or brush of amber bristles in a longitudinal row (both sexes).

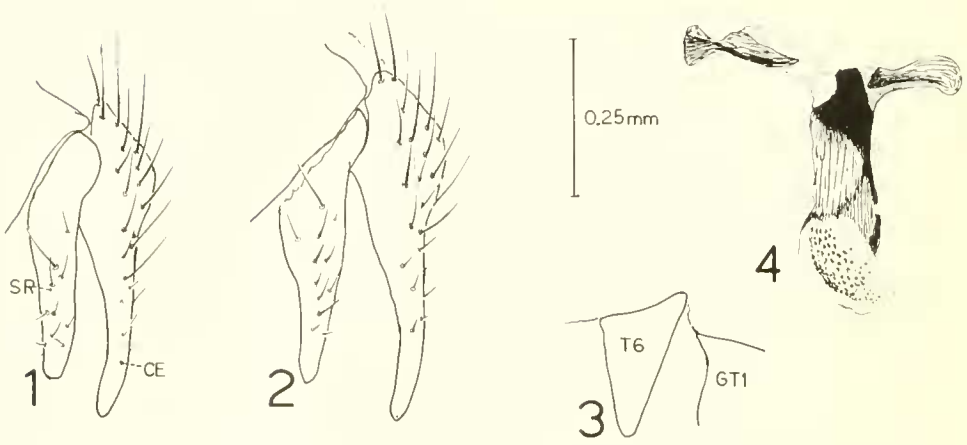
Phrosinella aurifacies, NEW SPECIES

Figs. 1–4

Size.—3.5 to 7.0 mm.

Male.—Frontal vitta, frontoorbital, facial and parafacial plates golden pollinose (vitta sometimes paler to light tan on middle); front at level of anterior ocellus 0.425 ± .012 of head width (holotype, 0.41), at narrowest near antennal base, 0.367 ± .014 (holotype, 0.37); antenna bright orange; arista thickened 0.518 ± .027 of length (holotype, 0.54).

Dorsum of thorax with acrostichal area to most of upper surface tan to brown or somewhat bronze pollinose; lateral edges of scutellum dark tan to brown pol-



Figs. 1–4. 1, *Phrosinella aurifacies*, cercus (CE) and surstylus (SR), lat. view. 2, *Phrosinella fulvicornis*, cercus and surstylus, lat. view. 3, Lateral profile of sixth tergum (T6) and anterior portion of syntergosternum 7 + 8 (GT1) of *Phrosinella fulvicornis*. 4, *Phrosinella aurifacies*, aedeagus (lat. view) with attached duct and pump sclerite. All figures are at same scale; the parts are drawn as if genitalia were spread with the tips of cerci, surstyli, and aedeagus pointing ventrally, and with the fly facing left.

linose (rarely pale); acrostichals, 0:1; dorsocentrals, 2:3; intraalars, 1:1; supraalars, 1:2 (the posteriormost of the usual set of 3 absent or weak); dorsal katepisternals, 2.

Foretibia without or with a very weakly differentiated posterior bristle; foretarsus modified, 2nd segment short, with a loose ventral and somewhat posterior tuft of fine long hairs extending beyond tip of fourth tarsomere; tarsomeres 3 to 5 atrophied (fig. 16, of Allen, 1926); legs black in ground color.

Wing with a faint but distinct clear brownish tinge on middle anterior part of wing (mainly along veins bordering cells sc, r1, r2, r4, br, and dm), rarely absent (?teneral specimens).

Abdominal terga 2 to 4 with 3 rows of blackish spots, lateral spots sometimes faint and those of tergum 4 sometimes confluent at posterior margin.

All sclerotized postabdominal parts blackish, surstyli somewhat paler; sixth tergum usually without setae, occasionally a bristle or two present; sixth tergum at middorsal, posterior edge produced dorsally into a small, distinctive quarter-spherical bump (Fig. 3), separated from syntergosternite 7 + 8 by a considerable length of membrane; surstylus, in lateral view, only slightly tapering from base to tip (Fig. 4); aedeagus of the basic miltogrammine type, without any conspicuously distinctive features (Fig. 4); epiphallus well-developed; pump sclerite unusually small (Fig. 4).

Female.—As male, except frontal vitta and adjacent frontoorbital tan to brown or bronze pollinose; facial plate usually golden pollinose, sometimes very faintly so; parafacial and anterior frontoorbital plates silver-white pollinose; front at level of median ocellus 0.452 ± .012 of head width, at base of antennae 0.450 ± .011; antennae usually orange, 3rd segment sometimes infuscated but not completely

black beyond junction area with second segment; arista thickened 0.489 ± .031 of length.

Foretarsomeres dorsoventrally flattened, ventral surfaces of tarsomeres 2–5 covered with very fine, yellowish hairs. Wings not or but very faintly brown-tinged (in same areas as male).

Holotype:—♂, Shiawasee Co., Mich., Rose Lake Conserv. Area, June 11, 1982, Wm. L. Downes Jr., in the U.S. National Museum of Natural History, Washington, D.C.

Paratypes.—187 ♂ & 252 ♀ from the following states and Canadian provinces: Connecticut, Illinois, Iowa, Kansas, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, New Jersey, New York, Ohio, Pennsylvania, South Carolina, South Dakota, Alberta, Manitoba, New Brunswick, Ontario, and Quebec. A list of paratypes with collection label data is available from the author upon request. Paratypes will be distributed with copies of the collection data list to lenders and to various other institutions after this paper has been published.

The surstylus of males of the closely related *P. fulvicornis* (Fig. 2) taper more obviously in lateral view than the surstylus of *aurifacies* (Fig. 1), but the male genitalia are somewhat variable, and this difference may not hold for all specimens.

The general brown tint of the body of *aurifacies* seems to represent cryptic coloration that enables them to blend in better with the bare, brown sand on which they are usually encountered.

P. aurifacies is the most common and widespread eastern North American species of *Phrosinella*. Apparently, two more or less peripheral populations have differentiated as distinct species from it. One of these is the 'true' *P. fulvicornis* (Coquillett), with which *aurifacies* has previously been confused. *Phrosionella fulvicornis* (in agreement with the holotype in the U.S. National Museum) is conspicuously silver-white in contrast to the tan-brown of *aurifacies*, and the males lack the bright golden head pollen of *aurifacies*. *Phrosinella fumosa* Allen is the second splinter species; it differs from *aurifacies* in having a blackish third antennal segment and prominent wing spots in the male.

Both *fumosa* and *fulvicornis* have much more restricted distributions than *aurifacies*. *Phrosinella fulvicornis* has been collected along the eastern North American seaboard, the eastern shore of Lake Michigan, and in the Medora Sand Dunes in Kansas. *Phrosinella fumosa* is not commonly collected. It has been found in Delaware, Maryland, Virginia, and Michigan.

Both species are also sympatric with *aurifacies*. I have taken *fumosa* in the same sand pit and at the same time with *aurifacies* near Lansing, Michigan. I have also collected *fulvicornis* simultaneously with *aurifacies* a short distance from the seacoast near New Haven, Connecticut and near the shore of Lake Michigan in Berrien Co., Michigan.

Where they occur together (and in eastern United States in general), the males of the three species are readily distinguished, even by naked eye in the field. *Phrosinella fumosa* males have black antennae and wing spots; *aurifacies* males have a golden, and *fulvicornis*, a silver-white face and parafacialium. The wing of male *fulvicornis* lacks the faint brown tinge of *aurifacies*, but occasional *aurifacies* males (which may be teneral) also lack the brown tinge.

The females are less distinct. The usually white frontal vitta of *fulvicornis*

females sometimes has a diffuse tan to brown spot on its central region, and the corresponding region in *aurifacies* is sometimes quite pale. However, the color, even when pale, usually spreads well beyond the vitta onto the frontoorbital plate in *aurifacies,* but not in *fulvicornis.* The arista is thickened to a greater extent in *fulvicornis* (0.6 of its length or a little more in both sexes), but there is a little overlap in this measurement. Some eastern females of *aurifacies* have infuscated antennae, but none from that area have antennae as black as those of *fumosa.*

Certain peripheral populations are not as easily classified. Two females from Sioux City, Iowa have very black third antennal segments, and are not included in the paratype series. The males of an excellent series from Prince Edward Island in the Canadian National Collection have quite pale pollen on their heads; it is conceivable that the series is actually *fulvicornis.* These too have been omitted from the paratype series, since their status is not clear.

In a short series of specimens from Nebraska the aristae are thickened to a greater extent than in typical *aurifacies,* and the male 'face' is only pale golden pollinose. While they are thus somewhat intermediate between *fulvicornis* and *aurifacies,* they fit *aurifacies* best, and have been assigned there. In making this judgment, I have assumed that *aurifacies* followed the Missouri River westward; it didn't differentiate there because sibling species weren't present to effect the character displacements found in the sympatric populations elsewhere.

While the male genitalia have been given special prominence in species discriminations in the Sarcophagidae, they are of little practical use in *Phrosinella.* In this respect *aurifacies* and its relatives are remarkably like the picture-winged drosophiloids of Hawaii (Kaneshiro, 1952): the males have conspicuous external differences, the male genitalia are very uniform, and the species have a courtship (see the following paper by Spofford & Kurczewski). *Phrosinella* fumosa even has pictured wings! This contrasts strikingly with many Sarcophaginae or *Eumacronychia* (Miltogrammini) in which the flies are externally very uniform but have very distinctive genitalia—just as in the scaptomyzoid drosophilids!

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